

AMENDMENTS TO THE CLAIMS

Please **CANCEL** claims 1-17 without prejudice or disclaimer.

Please **ADD** claims 18-29 as shown below.

This listing of claims will replace all prior versions, and listings, of claims in the application.

1-17. (Canceled)

18. (New) Device for measuring the position, the path or the angle of rotation of an object, comprising a scannable material measure which can be connected to the object and assigns measurement values to a position range of the object, these measurement values being cyclically repeated in successive position ranges of the object, and comprising a coding unit, which codes the number of passed-through measurement value cycles and has at least two code discs driven via reduction gears of the material measure, wherein the code discs (3, 4, 5) have an absolute angle coding (34, 44, 54), wherein the code discs (3, 4, 5) are coaxially disposed and have axially mutually offset gears (30, 40, 45, 50), wherein the respectively successive code discs (3, 4 and 4, 5) are coupled in such a way by a differential gearing (21, 30, 40 and 22, 45, 50) that they are jointly driven by means of a drive gear (21 and 22) and their gears (30, 40, 45, 50) respectively have different tooth numbers, and wherein the number of passed-through measurement value cycles is determined from the mutual angular position of the code discs (3, 4, 5), characterized in that the gears (30, 40, 45, 50) of all code discs (3, 4, 5) are of annular configuration, in that the code discs are mounted one against the other such that they are freely rotatable, in that the code tracks (34, 44, 54) of the angle codings of the code discs (3, 4, 5) are located in a single plane on concentrically disposed annular discs (33, 43, 53) in the free interior of the gears (30, 40, 45, 50), and in that the code tracks (34, 44, 54) of all code discs (3, 4, 5) are irradiated by a joint light transmitter (14) with

light path running in the free interior of the gears (30, 40, 45, 50) and are scanned by a scanner (15) radially sweeping the code tracks (34, 44, 54) of all code discs (3, 4, 5).

19. (New) Device according to Claim 18, characterized in that two gears (30, 40 and 45, 50) of the respectively successive code discs (3, 4 and 4, 5) are driven by a joint drive gear (21 and 22), which at the outer periphery engages in the two gears (30, 40 and 45, 50) and extends axially over the two gears (30, 40 and 45, 50).

20. (New) Device according to Claim 18, characterized in that the light transmitter (14) is disposed on a base plate (10) supporting the mounting of the code discs (3, 4, 5) and of the drive gears (21, 22), and in that the scanner (15) is disposed on a cover plate (12) placed opposite the base plate (10).

21. (New) Device according to Claim 20, characterized in that the base plate (10) and the cover plate (12) are configured as printed circuit boards.

22. (New) Device according to Claim 20, characterized in that the base plate (10) and the cover plate (12) close off axially at both ends a housing part (11), which accommodates the code discs (3, 4, 5).

23. (New) Device according to Claim 18, characterized in that the code discs (3, 4, 5) with their respective gears (30, 40, 45, 50) and their annular discs (33, 43, 53) bearing the code tracks (34, 44, 54) are one-piece injection mouldings made of a light-transparent plastic.

24. (New) Device according to Claim 18, characterized in that the complete coding unit is configured as an electronic component, which is suitable for the assembly of printed circuit boards.

25. (New) Device according to Claim 18, characterized in that the gear reduction ratios with which two respectively successive code discs (3, 4 and 4, 5) are driven differ by $1/2^n$.

26. (New) Device according to Claim 25, characterized in that the drive gears (21, 22) respectfully have 15 teeth and one code disc has 60 teeth and the other 64 teeth.

27. (New) Device according to Claim 26, characterized in that the coding unit has three code discs (3, 4, 5), so that 4096 measurement value cycles can be counted.

28. (New) Device according to Claim 18, characterized in that the code discs (3, 4, 5) respectfully have an absolutely coded angle scale comprising 32 angular steps.

29. (New) Device according to Claim 28, characterized in that the coding of the angle scale is formed by a pseudo random code having respectively at least 2×5 bits.